

The Regulatory System for Maize Seed in East Africa: Help or Hinder for Poor Farmers?

Hugo De Groot^{*1}, *Stephen Mugo*¹, *Evans Sikinyi*², and *Fred Kanampiu*¹

Summary of a paper prepared for presentation at the
9th International Conference on Agricultural Biotechnology: Ten Years After
organized by the International Consortium on Agricultural Biotechnology Research (ICABR)
Ravello (Italy) July 6 – 10, 2005

*Corresponding author: International Maize and Wheat Improvement Centre (CIMMYT), CIMMYT, P.O. Box 25171-00603 Nairobi, Kenya. Tel. 254-20-524600, fax 254-20-524601, Email: h.degroot@cgiar.org and s.mugo@cgiar.org.

¹CIMMYT, P.O. Box 25171, Nairobi

²Kenya Plant Health Inspectorate Services (KEPHIS), P.O. Box 49592, Nairobi

Abstract

Thanks to heavy government involvement in technology development and dissemination, many countries in Sub-Saharan Africa saw substantial increases in the use of improved maize seed that, together with an increased use of fertilizer, led to substantial yield and production increases. Most East African governments also imposed monopolies on research, grain markets, and agricultural input markets, including maize seed. These monopolies were protected by strong regulations. In the 1980s, however, maize yields and production stalled. Increasingly, government involvement, apart from being very expensive, was considered an impediment to private sector involvement, and therefore to growth. Under substantial pressure from donors and international organizations, most countries liberalized their agricultural sector in the 1990s, allowing private sector involvement of marketing of agricultural products and inputs, including the seed sector.

In the mid-2000s, however, two new developments could be observed in agricultural development. First, available statistics now clearly indicate that liberalization did not lead to an increased use of inputs, in particular seed and fertilizer. Similarly, yields did not improve, and food security, expressed as food production per capita, has deteriorated. The discussion focuses on the correct level of liberalization (did it go too far, or not far enough) and if other important factors, in particular the institutional and enabling environment, were being overlooked. Secondly, developments in biotechnology have led to many promising new technologies, including genetically modified crops. While this technology was embraced enthusiastically by North and South America, Europe and Japan resisted it, insisting on very strict biosafety regulations. Partly as a result of that debate, regulations for introducing GM crops in Africa tend to be very strict, possibly delaying the dissemination of available technologies that could improve the livelihood of poor African farmers right away.

Unlike the past, agricultural research institutes now need to be aware and fully understand the regulatory system relevant to the technologies they are developing. This makes it possible to identify bottlenecks in the regulatory system that can hamper their development or dissemination, and to avoid technology development in directions that would likely be rejected by the system. Alternatively, understanding the system makes it possible to engage in a discussion with the regulatory system, its partners and the policy makers, and based on that discussion advocate changes in the system. In particular, analysis can indicate areas where regulations might hinder poor farmers' access to improved technologies, or make technology development prohibitively expensive to them.

This paper describes and analyses the maize seed regulatory system in East-Africa (Kenya, Tanzania, Uganda and Ethiopia), in particular how it affects the development and dissemination of two new technologies: herbicide resistant maize against the parasitic weed striga, and insect resistant maize against stemborers. Both pests are of major importance to poor farmers, who are unlikely to purchase expensive seed. Cumbersome and expensive regulation would therefore put these technologies out of their reach. While the first technology uses natural mutants, the second uses genetic modification, in particular Bt gens.

The research is based on

- i) analysis of the technical aspects of the technologies, including implications of the technical aspects for research and seed production.
- ii) assessment of the benefits (estimation of crop losses, areas of infestation, number of poor farmers affected through poverty mapping), comparing it to the costs (in particular seed) and risks (to the environment and to human health),
- iii) Evaluation of the maize seed market in the 4 countries (visit to seed companies, and analysis of secondary data)
- iv) Evaluation of the regulatory system: description of the seed and biosafety systems (analysis of relevant texts and visits to the agencies), analysis of projects' experience with getting technologies through the systems

Preliminary results of this research show that liberalization has led to an increase in the number of active seed companies and the number of varieties on the market. However, this has not led to an increase of maize yields and production per capita in the region since the mid-1980s. Only Uganda has seen an increase in yield, but attribution is not clear. Ethiopia has seen an increase in total production in the mid-1990s, thanks to active intervention, but that increase has since leveled off. Requirements for the release of new varieties have generally become more relaxed. Varieties with new traits, especially pest resistance, can pass through the system with special recommendations, instead of having to prove an overall yield increase, regardless of pest pressure. Research institutes and seed companies do engage in discussions with the regulators.

Progress on the biosafety regulations is much slower. The first bill, Uganda's Biosafety Policy Bill was just published, while Kenya's is still under discussion. Both countries do have regulations and National Biosafety Committees (NBCs) in place, which have

processed research applications for GM bananas (Uganda), and sweet potatoes and maize (Kenya). Tanzania and Ethiopia have only started the process of developing regulations and regulatory structures.

Some conclusions can now be formulated. In general, regulatory systems start from a policy of protecting the farmer, but is only done at the source by allowing only varieties with well proven qualities. The free market principle that seed companies have no interest in bringing inferior material on the market, or that inferior material will not make it, is not accepted. Seed companies could be given more leeway, but more controls should be provided to assure seed in the market is actually of the variety approved. Secondly, although seed regulations have improved, but much more can be done. Especially, attention should be paid to the costs of regulations to the poor farmer. The development of less stringent “quality declared seed” label in Tanzania is particularly encouraging. Third, the regional harmonization of seed systems and regional trade would benefit seed companies as well as farmers.